THE WATSON-STILLMAN CO.

Engineers and Builders of Hydraulic Machinery

MAIN OFFICE AND WORKS
ALDENE, UNION CO., N. J.
(Post Office: Roselle, N. J.)

BRANCH OFFICES
NEW YORK, 50 Church Street
CHICAGO, McCormick Building

Products.

Hydraulic Jacks, Hydraulic Shears, Concrete Testing Presses, Benders, Forcing Presses, Heating and Chilling Presses, Tunnel Shields and Operating Equipment, Pressure Pumps, Valves, Pipe Fittings and Packings; "Jackahol," a lubricating compound.

Also, Special Machinery.

Plain Hydraulic Jack.

This type of hydraulic jack is for use when a firm rest or footing can be had. It is built in capacities from 4 to 60 tons and lifts of 9, 12, 18 and 24 ins.

Broad Base Hydraulic Jack.

The broad base hydraulic jack is for use where the foothold is not firm, or when the load is unsupported and steadiness is required, such as lifting cars, locomotives, etc. It is built in same sizes and capacities as plain type.

Horizontal Claw Hydraulic Jack.

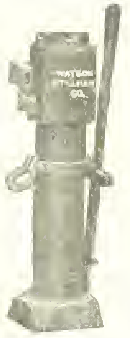
The horizontal claw hydraulic jack is a very handy tool. It will push horizontally its entire lifting stroke, and is so constructed that grit or dirt can not get between cylinder and ram. It is built in capacities from 4 to 40 tons and 12-in. to 18-in. movements.

Wrecking Hydraulic Jack.

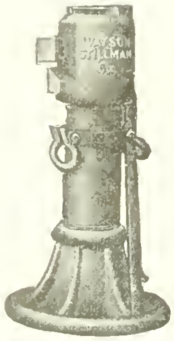
This type of jack is built to meet the demands of a complete wrecking tool. Its construction is such that it can be used in either vertical or horizontal position. A removable claw can be furnished to allow heavy lifting close to the ground. These jacks are built entirely of steel, in capacities from 15 to 60 tons and lifts of 9, 12 and 18 ins.

Outside Pump Hydraulic Jack.

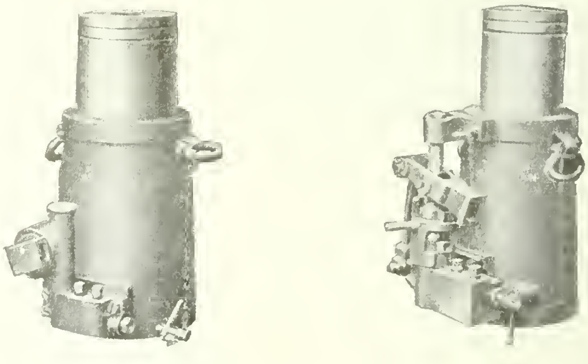
The outside pump hydraulic jack, vertical type, is built either with single or double plunger pump. The features of these jacks are the simplicity of design, accessibility of working parts, and large bases. Compactness is not attained at the expense of simplicity, or lightness at the expense of strength; they are made to work. They are used extensively by contractors, builders, dry dock and wrecking companies for underpinning and foundation work, in machineshops, and for hauling out oil well pipes. These are built in capacities from 60 to 200 tons and lifts of 9, 12 and 18 ins.



PLAIN HYDRAULIC JACK



BROAD BASE HYDRAULIC JACK



Single Plunger Pump Double Plunger Pump

OUTSIDE PUMP HYDRAULIC JACKS

HORIZONTAL CLAW HYDRAULIC JACK

WRECKING HYDRAULIC JACK

Swivel Claw Hydraulic Jack.

This type of hydraulic jack is a handy shop tool. Built light in weight and size, and can be packed in tool boxes of machine and engine erecting gangs. The claw is made to swivel to any position. This jack may be operated in either a vertical or horizontal position. It is built in capacities from 7 to 10 tons, 5-in. to 6-in. movements, and 13 to 17 ins. over all height.

SWIVEL CLAW HYDRAULIC JACK

Continued on next page

Independent Pump Hydraulic Jack.

Independent pump hydraulic jack will work where conditions make use of other jacks impossible. The jack may be placed in recesses out of reach of operator, who can operate pump at a safe distance, due to the flexible pipe connecting pump and jack. It may be used in connection with your own framework for bending, pressing, etc. It is made in capacities from 10 to 500 tons and lifts of 4, 8, 12 and 18 ins.

INDEPENDENT PUMP HYDRAULIC JACK

Principle of Hydraulic Jack.

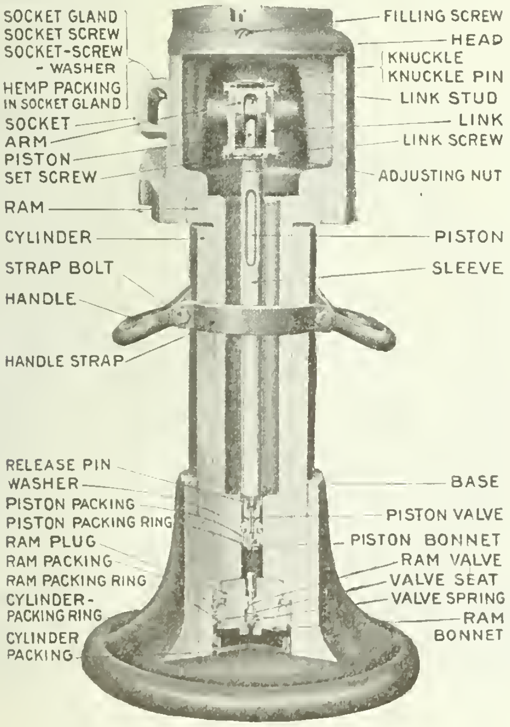
A sectional view of the standard broad base hydraulic jack is shown here to illustrate the principle upon which it works.

While the jacks have different bases, heads, heights, etc., they are alike in their working principle.

The operation is as follows: The lever is inserted with lug turned down, which meets a lug on the jack head, thus preventing the piston from going too far into the pump chamber. On the up-stroke of the lever the piston raises, the piston valve drops, and the pump chamber is filled from the reservoir. With the down-stroke the piston valve seats, and the liquid coming against the packing can not flow back to the reservoir. Each stroke of the piston increases pressure in pump chamber, and thus forces the liquid into the chamber under the ram, causing the ram to raise. To lower ram, the lever is inserted in the socket with the lug turned up and lowered, thus forcing the valve from seat and allowing liquid to return to reservoir.

Low Journal Box Hydraulic Jack.

This jack has a minimum over all height and a maximum lift. It works faster than a screw jack; is very light, and is practically indestructible. It is built in capacities from 7 to 15 tons, having 6-in. raise. The over all height is but 11 ins.

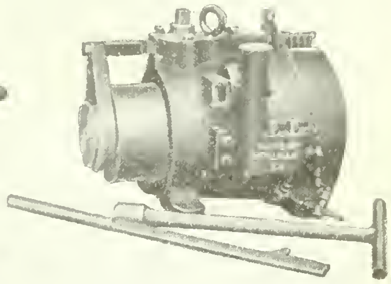


HYDRAULIC JACK, SECTIONAL VIEW

Outside Pump Hydraulic Jack, Horizontal Type.

This is another type of the outside pump jack. It is used in horizontal pressing; for pushing crank pins; for moving bridges, boilers, machinery, etc. The ram is pulled back by a rack and pinion device. Single or double plunger pumps can be supplied with this jack at no additional cost. The capacities of standard sizes are 60 to 200 tons, with 12-in. movement.

JOURNAL BOX JACK, LOW TYPE



OUTSIDE PUMP HORIZONTAL JACK

"Jackahol."

"Jackahol" is a liquid specially compounded for use with jacks and hydraulic tools. It is an antifreezing, non-corrosive and lubricating compound all in one. It will not thicken in cold weather, nor cause the valves to stick or clog. The standard formula calls for 1 part "Jackahol" and 4 parts water. In winter temperatures the proportions should be 1 part "Jackahol" to 2 parts water.

We have prepared "Jackahol" in several sized packages, and can offer it at the prices given below:

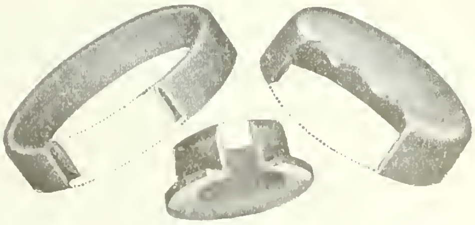
In barrels	$1.50 per gal.
In 10-gal. cans	1.60 per gal.
In 5-gal. cans	1.65 per gal.
In 1-gal. cans	1.75 per gal.

Kromax Packings.

Kromax packings are guaranteed to outlast under similar conditions of service any competitive packings on the market. As large users of packings in our own line of hydraulic machinery, we have been able to prove this claim.

Kromax packings are made from the best leather obtainable, prepared by a special process which gives them every quality necessary to the successful operation of hydraulic machinery.

They are made in all standard sizes. Special designs and sizes can be built to specifications.



KROMAX LEATHER PACKINGS

Continued on next page

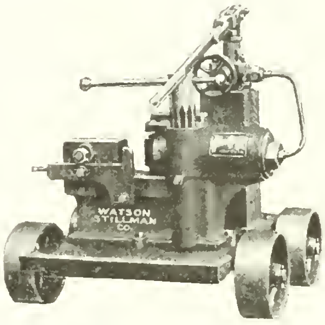
Flat and Round Bar Iron and Wire Rope Shear.

This lever shear is adaptable for cutting flat iron, round iron or wire rope, by merely changing the shear blades. Its construction is powerful throughout; and considering its weight and size, its capacity is high. They are made in a number of sizes and capacities.

Hydraulic Shear for Cutting Reinforcing Bar, etc.

This shear is especially adapted for cutting reinforcing bars, flats, rounds, ovals or very high carbon or tough material. The cutting blades are square and so designed as to give 8 available cutting edges before resharpening. It is portable and can be operated by one man. Tool shown is No. 3 size with a 4½-in. ram, exerting a pressure of 75 tons, and will cut material up to 1¼-in. square.

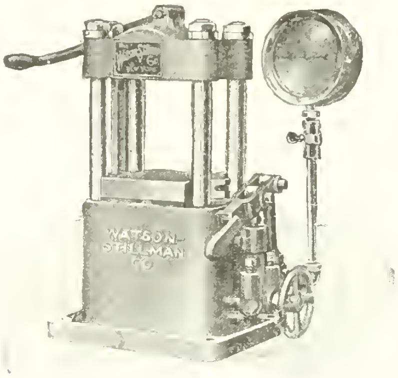
IRON AND WIRE ROPE SHEAR



HYDRAULIC SHEAR
For cutting steel reinforcing bars

Hydraulic Testing Press.

This press was designed originally for making compression tests on specimen blocks of concrete, etc. Its handy size makes it adaptable to many uses in laboratory or machineshop, such as press fitting small parts, and for an unlimited number of uses in bending, straightening, etc. It is only 27 ins. high, but is capable of a maximum pressure of 30 tons. Other sizes on demand.



TESTING PRESS

Tunneling Shields and Equipment.

This company has been closely identified with practically every tunneling enterprise, wherever the shield method has been used in this country, since 1868, when the Beach Tunnel in New York City was started. Our Engineering Department has profited from the many difficulties encountered, so that the experience gained is most valuable to those contemplating tunnel construction.

The illustrations give a good idea of the construction of the standard types of shield, similar to those furnished by this company for the Hudson & Manhattan Railway Co., Interborough Rapid Transit, Pennsylvania Hudson River Tunnels, Boston Subway Tunnels, Chicago Subway Tunnels.

These shields are rigidly built, well reinforced, have ample passages and working platforms. The operation is by 16 or more hydraulic cylinders, arranged so that the controlling valves can operate one or more at a time, or all simultaneously, as the alignment of the tunnel or substances met with demand.

Our tunnel equipment includes pressure pumps, accumulators, intensifiers, operating valves, fittings, pipe, segment erectors, erector platforms and everything necessary to the successful operation of tunneling machinery.

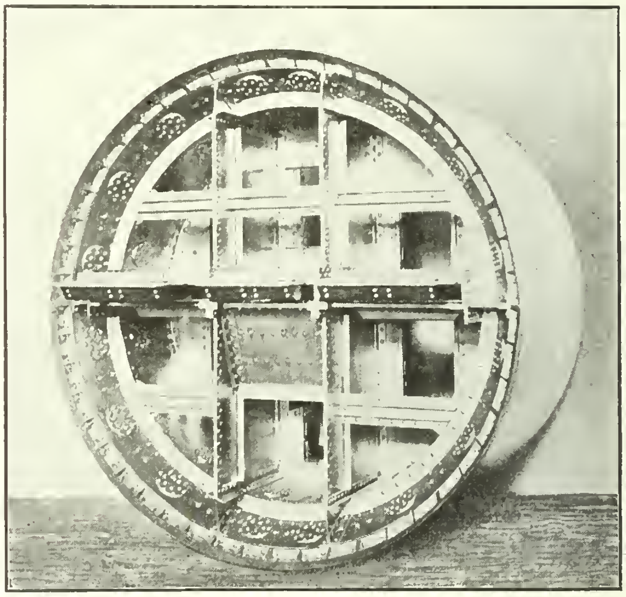


Fig. 1. FRONT OF STANDARD TUNNELING SHIELD
Showing cutting edge, bulkhead doors and transoms

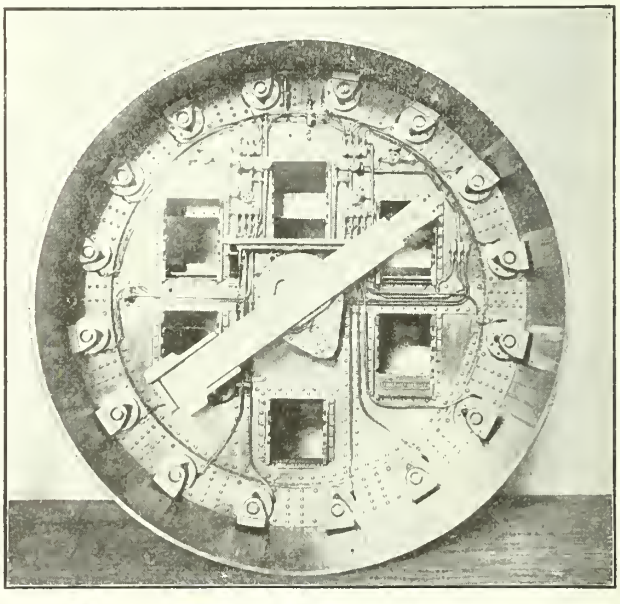


Fig. 2. BACK OR PRESSURE END OF STANDARD TUNNELING SHIELD
Showing protecting shield, hydraulic cylinders, operating valves and segment erecting arm or crane